

Application No.: 10/526,998
Amendment dated June 22, 2009
In Response to Office Action of December 22, 2009

TJA-102US

Amendments to the Drawings:

The attached drawing sheet includes changes to Figure 10. This sheet replaces the original sheet

Attachment

Remarks/Arguments:

Claims 28-66 are pending. Claims 28-66 stand rejected. In this response applicant amends claim 28 and cancels claim 62. Accordingly, claims 28-61 and 63-66 are presented for reconsideration.

Objections to the Drawings

The Office Action at page 3, paragraph 3, objected to the claims under 37 CFR 1.83(a) because "Every feature of the invention specified in the claims is not shown ..." Applicants submitted amended Figure 9 and new Figure 10 in response to the previous Office Action that shows some of the elements set forth in paragraph 3 of the Office Action. Regarding each of these elements, they are well-described in the specification as originally filed, e.g., at page 7, lines 3-19. Applicants previously submitted amendments to the specification adding reference numbers to the originally filed disclosure. In the most recent Official Action there was no objection to this submission as raising new matter issues and Applicant therefore considers these amendments to be acceptable to the Office.

In accordance with the most recent requirements by the Examiner, Figure 10 is amended to include labels within each block.

Regarding other of the claimed elements, applicant respectfully traverses the objection. Specifically:

1) the connection means with the exterior is shown in Figure 1 as element 13 and described at page 6, lines 14-15;

2) the heating means is shown in Figures 1-8 for example and described in the specification at page 7, line 20 through page 9, line 31;

3) with respect to the electrical resistance of claim 50, this element is also shown in the figures and described in the specification. Applicant respectfully directs the Examiner's attention to Figures 1-8 and the specification at page 6, line 6 through page 10, line 17;

4) with respect to the objection to the Peltier cell claimed in claim 61, applicant traverses this objection and believes that no further amendment to the drawings are necessary;

5) regarding the objection to claim 62, applicant has cancelled this claim.

Accordingly, this objection is now moot.

In accordance with 37 CFR 1.83(a) "conventional features disclosed in the specification and claims, where their detailed illustration is not essential for the proper understanding of the invention, should be illustrated in the drawing in the form of a ... labeled representation..." (emphasis added) Applicant respectfully submits that the original labeled figures and the recently submitted figures meet this requirement and requests therefore that the objection be withdrawn. Accordingly, withdrawal of the object to the drawings is respectfully requested.

Rejections Under 35 U.S.C. § 102

Claims 28 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujikawa et al. (US6959994). Applicant respectfully submits that this rejection is overcome by the amendments to the claims for the reasons set forth below.

Applicant's invention as recited in claim 28, includes features not disclosed or suggested by Fujikawa, namely:

An image acquisition unit ... comprising ...a casing configured to be mounted on an external structure of said vehicle, said casing comprising a protected interior, said casing defining a window closed by a transparent element and supporting means defined by part of said casing for supporting an optical system inside said casing and facing said window ...

... said optical system dividing the interior of said casing into two separated spaces: a first one enclosed between a first end of said optical system and by the transparent element, and a second one enclosed between a second end of said optical system and part of the casing, being said first space of a smaller volume or dimensions than a volume or dimensions of said second space ...

... image detection means located inside said second space of said casing, facing said optical system and associated with connection means with the exterior, for supplying power and/or for bidirectional signal interchange, said image detection means including an image detector and electronic components in contact with the inner air of said second space of said casing ...

... heating means for providing thermal energy to said first space.
(Emphasis added)

These features are described throughout applicant's specification as originally filed, including, for example, page 6, line 6 through page 7, line 2, page 10, lines 18-33 and

Figures 1, 7, 8 and 9.

Fujikawa is relied upon as "[disclosing] an image acquisition unit (5) with a heating device for monitoring an exterior of a vehicle, comprising...a transparent element (7)...image detection means...with connection means with the exterior, for supplying electrical signal and/or for bidirectional signal interchange; and heating means (15) for providing thermal energy to said transparent element..."

Fujikawa does not disclose or suggest, however, i) the optical system dividing the interior of the casing into two separated spaces: a first one enclosed between a first end of the optical system and by the transparent element, and a second one enclosed between a second end of the optical system and part of the casing, being said first space of a smaller volume or dimensions than a volume or dimensions of said second space and ii) the image detection means located inside the second space of the casing, facing the optical system and associated with connection means with the exterior, for supplying power and/or for bidirectional signal interchange, the image detection means including an image detector and electronic components in contact with the inner air of the second space of the casing.

Further, Fujikawa fails to disclose or suggest that the heating means comprising a heating element disposed along at least a portion of a periphery of said transparent element. Rather, Fujikawa discloses a heating wire 14 drawn on the transparent film in a "meandering pattern" thus interfering with the view of the imager. See Fig. 4 of Fujikawa.

In contrast, applicant's invention as recited in claim 28 includes i) the optical system dividing the interior of the casing into two separated spaces: a first one enclosed between a first end of the optical system and by the transparent element, and a second one enclosed between a second end of the optical system and part of the casing, being said first space of a smaller volume or dimensions than a volume or dimensions of said second space, ii) the image detection means located inside the second space of the casing, facing the optical system and associated with connection means with the exterior, for supplying power and/or for bidirectional signal interchange, the image detection means including an image detector and electronic components in contact with the inner air of the second space of the casing, and iii) heating means for providing thermal energy to the transparent element, or to an adjacent zone thereto, the heating means comprising a heating element disposed along at least a portion of a periphery of the transparent element.

It is because applicant has included the features of i) the optical system dividing the interior of the casing into two separated spaces: a first one enclosed between a first end of the optical system and by the transparent element, and a second one enclosed between a second end of the optical system and part of the casing, being said first space of a smaller volume or dimensions than a volume or dimensions of said second space, ii) the image detection means located inside the second space of the casing, facing the optical system and associated with connection means with the exterior, for supplying power and/or for bidirectional signal interchange, the image detection means including an image detector and electronic components in contact with the inner air of the second space of the casing, and iii) heating means for providing thermal energy to the transparent element, or to an adjacent zone thereto, the heating means comprising a heating element disposed along at least a portion of a periphery of the transparent element, that applicant is able to provide an image acquisition unit for monitoring the exterior of a vehicle that is able to do so in adverse weather and humidity conditions.

Fujikawa fails to achieve these advantages because Fujikawa does not include i) the optical system dividing the interior of the casing into two separated spaces: a first one enclosed between a first end of the optical system and by the transparent element, and a second one enclosed between a second end of the optical system and part of the casing, being said first space of a smaller volume or dimensions than a volume or dimensions of said second space, ii) the image detection means located inside the second space of the casing, facing the optical system and associated with connection means with the exterior, for supplying power and/or for bidirectional signal interchange, the image detection means including an image detector and electronic components in contact with the inner air of the second space of the casing, and iii) heating means for providing thermal energy to the transparent element, or to an adjacent zone thereto, the heating means comprising a heating element disposed along at least a portion of a periphery of the transparent element.

Applicant respectfully submits, therefore, that the rejection of claim 28 as being anticipated by Fujikawa should be withdrawn and the claim allowed.

Claim 29 depends upon claim 28 and, thus, is likewise not subject to rejection for at least the reasons set forth above with respect to claim 28.

The Office Action sets forth at page 6, paragraph 7, "Claims 28-31, 33, 37 and 59 are rejected under 35 U.S.C. 102(b) as being anticipated by Schofield et al. (US6498620)."

Applicant respectfully submits that this rejection is overcome by the amendments to the claims for the reasons set forth below.

Schofield is relied upon as "[disclosing] an image acquisition unit (14, 16) with a heating device (168) for monitoring an exterior of a vehicle, comprising: a casing comprising a protected interior, a window closed by a transparent element and supporting means for supporting an optical system facing said window; image detection means located in said casing, facing said optical system and associated with connection means with the exterior, for supplying electrical signal and/or for bidirectional signal interchange; and heating means for providing thermal energy to said transparent element, or to an adjacent zone thereto..."

Applicant respectfully disagrees with this overly broad interpretation of Schofield. Specifically, Figure 20 (relied upon by the Office as the basis for the rejection) and the accompanying description at col. 20, lines 13-40 fail to disclose any of applicant's claimed structural features. Furthermore, there is no disclosure or suggestion that the heater 168 provides thermal energy to a transparent element associated with the image detector. Rather, Schofield only discloses that heater 168 may be used "to stabilize the temperature of the device in low ambient temperature conditions."

Further, Schofield fails to disclose or suggest that the heating means comprises a heating element disposed along at least a portion of a periphery of the transparent element. To make up for this missing feature, the Office Action sets forth "Inherently, said heating means comprising a heating element disposed along at least a portion of a periphery of said transparent element base[d] on column 18, lines 41-43, 'A heater may be applied to each image capture device in order to remove dew and frost that may collect on the optics of the device.'" Applicant respectfully disagrees.

To establish inherency, it must be clear that the missing descriptive matter is necessarily present in the thing described in the reference and that it would be so recognized by those skilled in the art. "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." In re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1997).¹ Applicant respectfully submits that Schofield does not inherently or directly disclose or suggest that the heating means comprises a heating element disposed along at least a portion of a periphery of the transparent element as required in applicant's claimed

invention.

Further, Schofield fails to disclose or suggest i) the optical system dividing the interior of the casing into two separated spaces: a first one enclosed between a first end of the optical system and by the transparent element, and a second one enclosed between a second end of the optical system and part of the casing, being said first space of a smaller volume or dimensions than a volume or dimensions of said second space and ii) the image detection means located inside the second space of the casing, facing the optical system and associated with connection means with the exterior, for supplying power and/or for bidirectional signal interchange, the image detection means including an image detector and electronic components in contact with the inner air of the second space of the casing.

In contrast, applicant's invention as recited in claim 28 includes i) the optical system dividing the interior of the casing into two separated spaces: a first one enclosed between a first end of the optical system and by the transparent element, and a second one enclosed between a second end of the optical system and part of the casing, being said first space of a smaller volume or dimensions than a volume or dimensions of said second space, ii) the image detection means located inside the second space of the casing, facing the optical system and associated with connection means with the exterior, for supplying power and/or for bidirectional signal interchange, the image detection means including an image detector and electronic components in contact with the inner air of the second space of the casing, and iii) heating means for providing thermal energy to the transparent element, or to an adjacent zone thereto, the heating means comprising a heating element disposed along at least a portion of a periphery of the transparent element.

It is because applicant has included the features of i) the optical system dividing the interior of the casing into two separated spaces: a first one enclosed between a first end of the optical system and by the transparent element, and a second one enclosed between a second end of the optical system and part of the casing, being said first space of a smaller volume or dimensions than a volume or dimensions of said second space, ii) the image detection means located inside the second space of the casing, facing the optical system and associated with connection means with the exterior, for supplying power and/or for bidirectional signal interchange, the image detection means including an image detector and electronic components in contact with the inner air of the second space of the casing,

¹ See also, TurboCare Division v. General Electric Co. 60 USPQ2d 1017, 1023 (Fed. Cir. 2001)

and iii) heating means for providing thermal energy to the transparent element, or to an adjacent zone thereto, the heating means comprising a heating element disposed along at least a portion of a periphery of the transparent element, that applicant is able to provide an image acquisition unit for monitoring the exterior of a vehicle that is able to do so in adverse weather and humidity conditions.

Schofield fails to achieve these advantages because Schofield does not include i) the optical system dividing the interior of the casing into two separated spaces: a first one enclosed between a first end of the optical system and by the transparent element, and a second one enclosed between a second end of the optical system and part of the casing, being said first space of a smaller volume or dimensions than a volume or dimensions of said second space, ii) the image detection means located inside the second space of the casing, facing the optical system and associated with connection means with the exterior, for supplying power and/or for bidirectional signal interchange, the image detection means including an image detector and electronic components in contact with the inner air of the second space of the casing, and iii) heating means for providing thermal energy to the transparent element, or to an adjacent zone thereto, the heating means comprising a heating element disposed along at least a portion of a periphery of the transparent element.

Because Schofield fails to disclose each and every feature of applicant's invention of claim 28, applicant respectfully submits that the rejection of claim 28 as being anticipated by Schofield et al. should be withdrawn and the claim allowed.

Regarding claim 37, there is absolutely no disclosure or suggestion in Schofield that the electrical heater comprises at least one electrical resistance directly applied on the transparent element. Applicant notes that the Office relies upon Figure 20 for showing this feature but the applicant is unable to find any reference in Figure 20 or in the accompanying description in the specification that discloses or suggests that the heater is comprised of at least one electrical resistance directly applied on the transparent element. Applicant previously requested that the Office point out with specificity where this feature may be found in the cited prior art. Although the Office provided a response on page 20 of the most recent Office Action, the response did not address applicant's request. Applicant respectfully submits, therefore, that the rejection of claim 37 is improper, should be withdrawn and the claim allowed.

Regarding claims 29-31, 33 and 59, because these claims depend upon allowable

claim 28 they are likewise not subject to rejection for at least the reasons set forth above with respect to claim 28.

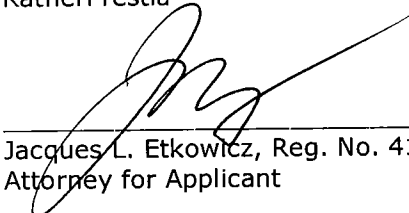
Rejections Under 35 U.S.C. § 103

Claims 32, 34-36, 38-58 and 60-66 are rejected as unpatentable over Schofield either alone or in combination with one or more of Dokken, Flaishans, Suman, Jones, Smucker, Hirmatsu, Mazzilli, and Uskolovsky. The rejection of claim 62 is moot in view of its cancellation. These remaining rejections were addressed by the applicant in the previous response and are not repeated. Additionally, because each of these references fail to make up for the deficiencies of the primary reference Schofield, applicant submits that claims 32, 34-36, 38-58, 60-61 and 63-66 are allowable for at least the reasons set forth above with respect to claim 28 from which they depend.

In view of the amendments and remarks set forth above, applicant submits that the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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Attachment: Figure 10 (1 sheet)

Dated: June 22, 2009

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